

Claims

What is claimed is:

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5 1. An electroactive bender actuator,
 comprising:
 a pair of spaced electrodes;
 an electroactive layer disposed at least in
part between and coupled with said electrodes; and
 an insulating coating (operable to be applied)
10 by vapor deposition covering at least a portion of an
outer surface of said actuator.

20 2. The electroactive bender actuator of
claim 1 wherein said coating covers the entire outer
15 surface of said actuator.

20 3. The electroactive bender actuator of
claim 1 wherein said coating is silicon impregnated
with aluminum oxide.

 4. The electroactive bender actuator of
claim 1 wherein said coating is phosphate glass filled
with chromium carbide.

25 5. The electroactive bender actuator of
claim 1 wherein said coating is
polytetrafluoroethylene.

30 6. The electroactive bender actuator of
claim 1 wherein said coating is parylene.

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7. The electroactive bender actuator of claim 1 wherein said electrode layers have outer edges that are offset from one another.

5 8. The electroactive bender actuator of claim 1 wherein said electrode layers have outer edges that are generally aligned to lie in common planes.

10 9. The electroactive bender actuator of claim 1 wherein only the outer edges of said electrode layers and said electroactive layer are coated.

10. An electroactive bender actuator, comprising:

15 a pair of spaced electrode layers having a plurality of outer edge surfaces that are generally aligned to lie in common planes; and

an electroactive layer disposed at least in part between and coupled with said electrode layers
20 and having a plurality of outer edge surfaces.

11. The electroactive bender actuator of claim 10 further comprising an insulating coating covering said outer edge surfaces of said
25 electroactive and electrode layers.

12. The electroactive bender actuator of claim 11 wherein said coating covers the entire outer surface of said actuator.

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13. The electroactive bender actuator of claim 11 wherein said coating is silicon impregnated with aluminum oxide.

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14. The electroactive bender actuator of claim 11 wherein said coating is phosphate glass filled with chromium carbide.

15. The electroactive bender actuator of claim 11 wherein said coating is applied using a vapor deposition process.

16. The electroactive bender actuator of claim 11 wherein said coating is polytetrafluoroethylene.

17. The electroactive bender actuator of claim 11 wherein said coating is parylene.

18. The electroactive bender actuator of claim 11 wherein said outer edge surfaces of said electroactive layer are generally aligned to lie in common planes with said outer edge surfaces of said electrode layers.

19. A method of manufacturing an electroactive bender actuator having a pair of spaced electrode layers and an electroactive layer disposed at least in part between said electrode layers, said electrode layers and said electroactive layer having respective outer edges, said method comprising:

aligning said outer edges generally in a common plane; and

coating said outer edges of said electrode layers and said electroactive layer with an insulating material.

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20. The method of claim 19 wherein said coating comprises dipping said electroactive bender actuator in said insulating material and allowing said insulating material to dry on said outer edges of said electrode layers and said electroactive layer.

21. The method of claim 19 wherein said coating comprises coating said outer edges of said electrode layers and said electroactive layer with said insulating material using a vapor deposition process.

22. The method of claim 19 wherein said coating comprises spraying said insulating material onto at least said outer edges of said electrode layers and said electroactive layer.

23. The method of claim 19, further comprising coating at least a portion of an outer surface of said electroactive bender actuator with said insulating material.

24. The method of claim 19 further comprising masking a portion of said electroactive bender actuator with a mask prior to said coating.

25. The method of claim 24 further comprising removing said mask to expose an uncoated surface of said electroactive bender actuator.

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